

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A system for the implementation of integrating physical devices into a software based framework for distributed processing, said system comprising:

a distributed processing system;

at least one field programmable physical device, said physical device having programmable content loaded thereupon whereby a user establishes capabilities of said physical device;

an adaptation layer, comprising an adaptation layer interface and at least one device object, said device object comprising at least one capability object, said capability object corresponding to the programmable content and one physical device interface object; said physical device interface object corresponding to and controlling electrical interfaces to said physical device independent of said programmable content;

at least one software component interface, having at least six service interfaces communicating with said adaptation layer interface; said at least six service interfaces comprising a deployment service interface; a communication service interface; a communication connection service interface; a control service interface; and a component behavior control interface;

at least one software component, coupled to said software component interface; and wherein said software component interface controls said physical device through said adaptation layer.

Claim 2 (Original): The system according to claim 1 wherein said physical device is at least one physical device chosen from the group of physical devices consisting of programmable devices, general purpose processors, specialized circuits, and field programmable gate arrays.

Claim 3(Previously Presented): The system according to claim 1 wherein said at least one software component interface is common to software-based frameworks for distributed computing.

Claims 4 -5 (Canceled).

Claim 6 (Previously Presented): The system according to claim 1 wherein said at least one software component interface comprises:

an engineering service interface.

Claim 7 (Previously Presented): The system according to claim 1 wherein said adaptation layer interface providing a single point of interface between said adaptation layer and said at least one software component interface.

Claim 8 (Original): The system according to claim 1 wherein said at least one physical device is interfaced to a general purpose processor.

Claim 9 (Original): The system according to claim 1 further comprising a processor core deployed on at least one said physical device.

Claim 10 (Original): The system according to claim 1 wherein said physical device interface object controls said physical device independently from a functionality performed by said physical device

Claim 11 (Original): The system according to claim 1 wherein said capability object controls a functionality performed by said physical device independently from said physical device.

Claim 12 (Original): The system according to claim 1 wherein said physical device is replaceable.

Claim 13 (Original): The system according to claim 11 wherein said physical device interface object is replaceable.

Claim 14 (Original): The system according to claim 1 wherein said capability object is replaceable.

Claim 15 (Previously Presented): The system according to claim 1 wherein said capability object provides activities for compliance with a software framework for distributed computing, said activities comprising:

- deployment;
- control;
- behavior control;
- establishment of connections for communications;
- communication and data transfer; and
- data sampling and output.

Claim 16 (Original): The system according to claim 1 wherein said capability object comprises:

- at least one base instance object;
- at least one communication object, having a communication instance object; and
- at least one engineering object, having an engineering instance object.

Claim 17 (Original): The system according to claim 16 wherein said base instance object, said communication instance object, and said engineering instance object are replaceable.

Claim 18 (Currently Amended): A system for the control of a software component operating on a software based framework, said system comprising:

- a field programmable physical device, said software component being configured to be deployed and executed upon said physical device;
- a capability object deployed on a device object corresponding to said physical device as programmed by a user or said software component;

said capability object comprising:

- at least one base instance object;
- at least one communication object; and
- at least one engineering object.

Claim 19 (Original): The system according to claim 18 wherein said physical device is at least one physical device chosen from the group of physical devices consisting of programmable devices, general purpose processors, specialized circuits, and field programmable gate arrays.

Claim 20 (Original): The system according to claim 18 wherein said base instance is configured to provide deployment, control, and behavior control activities.

Claim 21 (Previously Presented): The system according to claim 18 wherein said communication object is configured to provide establishment of connections for communications and communication and transfer of data activities.

Claim 22 (Original): The system according to claim 18 wherein said engineering object is configured to sample data at a test point and transfer to an application for display and analysis.

Claim 23 (Original): The system according to claim 18 wherein said communication object comprises a communication instance object, said communication instance object is configured to provide deployment, control, and behavior control activities.

Claim 24 (Original): The system according to claim 18 wherein said engineering object comprises an engineering instance object, said engineering instance object is configured to provide deployment, control, and behavior control activities.

Claim 25 (Original): The system according to claim 18 further comprising a communication instance object, a engineering instance object; said communication instance object, said engineering instance object, and said base instance object each being independently replaceable.

Claim 26 (Currently Amended): A system for distributed processing, said system comprising:  
a distributed processing framework;  
a plurality of processors interfaced with said framework;  
a client application software communicating with said framework;

at least one of software component deployed on said plurality of processors;  
each said processor executing said software components;  
each said software component controlling a programmable device having a programmed functionality via an adaptation layer;  
said adaptation layer comprising an adaptation layer interface, at least one device object,  
at least one capability object deployed on said device object, said device object having a  
physical device interface object independent of said programmed functionality; and  
said capability object and said physical device interface being independently replaceable.

Claim 27 (Previously Presented): The system according to claim 26 wherein at least one said processor is a processor chosen from the group of processors consisting of programmable devices, general purpose processors, specialized circuits, and field programmable gate arrays.

Claim 28 (Original): The system according to claim 26 wherein a plurality of said software components may be deployed on each said processor.

Claim 29 -41 (Canceled).